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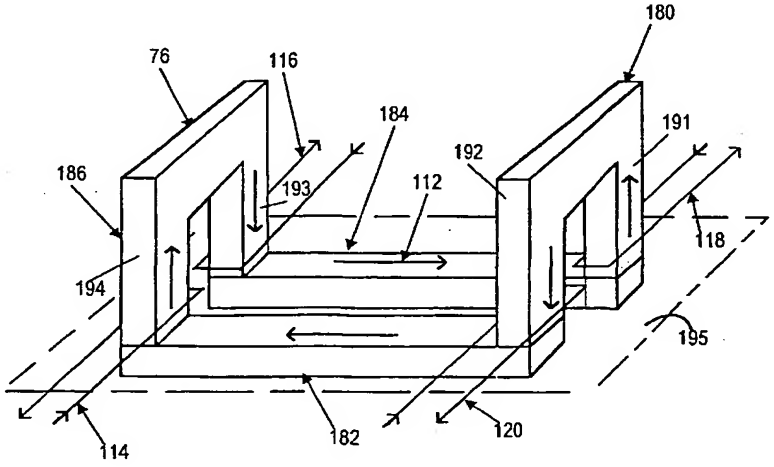
(54) Title: LOW PROFILE MAGNETIC ELEMENT



(57) Abstract: A low profile magnetic element used in cooperation with a multilayer printed circuit board has two or more core arms penetrating the board from one outer surface to the other and a series of magnetic core elements, at least one on each side of the board, bridging pairs of the core arms to form a closed, unbranched flux path. Series-connected windings form a transformer primary and are wound on the core arms that penetrate the board. Parallel-connected windings form a transformer secondary and are also wound on the core arms. The series-connected windings and the parallel-connected windings may be buried windings printed on internal surfaces of the multilayer board. The connected in series primary windings all have the same number of turns and the parallel-connected secondary windings all have the same number of turns. The parallel secondary windings are connected in current additive fashion to afford a high current transformer output. Output treating circuitry can treat each output separately in parallel and identically, being connected between the winding outputs and their point of connection. The transformer core can be assembled entirely of C and I magnetic elements. In one embodiment, a pair of magnetic plates overlying the outer surfaces of the multilayer circuit board are in flux-conducting relation with all of the core arms penetrating the board.

WO 03/088285 A1